Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of Parts 25, 74, 78 and 101 of the	)	
Rules regarding Coordination between the Non-	)	ET Docket No. 03-254
Geostationary and Geostationary Satellite Orbit	)	
Fixed-Satellite Service and Fixed, Broadcast	)	
Auxiliary and Cable Television Relay Services in	)	
the 7 GHz, 10 GHz and 13 GHz Frequency Bands	)	

COMMENTS OF THE BOEING COMPANY

The Boeing Company ("Boeing"), by its attorneys and pursuant to Section 1.415 of the Commission's rules, 47 C.F.R. § 1.415, respectfully submits these comments in response to the above-captioned Notice of Proposed Rulemaking ("*NPRM*") in which the Commission has proposed frequency coordination rules for satellite earth stations operating co-frequency with Fixed Service ("FS"), Broadcast Auxiliary Service ("BAS") and Cable Television Relay Service ("CARS") licensees in various spectrum bands.

I. INTRODUCTION

Boeing is authorized by the Commission to launch and operate a Mobile-Satellite Service ("MSS") network using service links in the 2 GHz MSS band and feeder links in portions of the

10.7-11.7 GHz ("10 GHz") and 12.75-13.25 GHz ("13 GHz") bands.[1] Boeing is required to coordinate the placement of its feeder link earth stations with terrestrial operators pursuant to Section 25.203 of the Commission's rules.[2] In addition, the Commission conditioned Boeing's use of 13 GHz spectrum for Earth-to-space feeder links on the adoption of new rules for coordinating satellite earth stations with BAS and CARS mobile pickup licensees operating in the same band.[3] As a consequence, Boeing has a direct and immediate interest in this proceeding.

II. THE COMMISSION'S PROPOSED RULES WILL ENABLE SATELLITE EARTH STATION OPERATORS TO SUCCESSFULLY COORDINATE THEIR OPERATIONS WITH BAS AND CARS LICENSEES IN THE 13 GHz BAND

The *NPRM* is correct in concluding that spectrum sharing between satellite earth stations and BAS/CARS fixed and mobile operations is feasible in the 13 GHz band.[4] The two services can operate cooperatively for a number of reasons.

First, the Commission's rules limit the number of satellite earth stations that are permitted to operate in the 13 GHz band. Although the band is allocated on a co-primary basis to the Fixed Satellite Service ("FSS"), Footnote NG104 stipulates that only international FSS networks may

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[1] *See The Boeing Company, Modification of Authority For Use of the 1990-2025/2165-2200 MHz and Associated Frequency Bands for a Mobile-Satellite System*, Order and Authorization, DA 03-2073 (Int'l Bur., June 24, 2003) ("*Boeing 2 GHz MSS Modification Order*").

[2] *See id.*, ¶ 18.

[3] *See id.*, ¶¶ 18 & 36. In conditioning Boeing's authorization, the Commission acknowledged that "[i]n the unlikely event that the rulemaking is not completed before Boeing needs TT&C uplink authority in connection with the launch of its satellite we would, of course, entertain on its merits any request for modification of this condition or other appropriate relief." *Id.*, ¶ 18 n.40.

[4] *See NPRM*, ¶ 21.

operate in the band using geostationary ("GSO") satellite networks.[5] The Commission has granted waivers of Footnote NG104 only on a limited basis and only to permit a small number of MSS feeder link earth stations to operate subject to restrictions in the band.[6] The Commission's rules further permit gateway stations operating with non-geostationary ("NGSO") FSS networks to operate in the band on a restricted basis.[7] The Commission authorized NGSO gateway operations because only a relatively small number of such facilities are expected to be needed in the United States.[8]

Second, coordination is feasible because satellite earth station operators can identify locations for their feeder link facilities that minimize potential spectrum sharing difficulties with BAS/CARS operations. Boeing acknowledges that BAS/CARS operators need considerable flexibility to provide live coverage of news events and other televised activities. As the Commission acknowledges, however, the locations where BAS/CARS licensees routinely operate are highly predictable, such as stadiums, fair grounds, airports and government facilities.[9] By avoiding these areas (and also avoiding locations directly in between such facilities and BAS/CARS receivers), satellite earth station operators can reduce substantially the potential for situations in which real time coordination is necessary. Earth station operators can also use

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[5] *See* 47 C.F.R. § 2.201.

[6] *See, e.g., Boeing MSS Modification Order*, ¶ 18 (detailing restrictions on Boeing's operation of feeder link earth stations in the 13 GHz band).

[7] *See NPRM*, ¶ 4.

[8] *See id.*, ¶ 21.

[9] *See id.*, ¶ 30.

natural and artificial shielding to further ensure that spectrum sharing difficulties involving BAS/CARS operators rarely, if ever, arise.[10]

Third, coordination is feasible because the number of BAS/CARS licensees in each community is relatively small and the operators of BAS/CARS equipment are usually knowledgeable regarding the options available to mitigate interference. Operators of BAS electronic news gathering trucks routinely make slight adjustments with respect to the pointing direction of their transmitters, the physical location of their ENG trucks, and the selection of BAS channels to ensure an optimal transmission signal back to the station. Satellite earth station operators can work cooperatively with television stations in neighboring communities to educate operators of ENG equipment regarding the specific spectrum sharing agreements that exist between the parties.

In this regard, the Commission observes in its *NPRM* that mobile BAS spectrum uses, such as aeronautical operations, "require a great deal of deployment flexibility to cover news or events when and where they happen."[11] Although mobile BAS operators require significant operational flexibility, they also enjoy substantial flexibility in balancing the coverage requirements of individual news events with the line-of-sight transmission requirements of BAS networks. For example, BAS equipment operators using helicopters routinely make modest adjustments in altitude and physical location in order to quickly resolve spectrum interference issues, while never leaving the scene of televised activities. These same techniques can also be

[10] *See id.*, ¶ 31.

[11] *Id.*, ¶ 21.

used to avoid any spectrum sharing difficulties that might exist in covering news events in locations that are close to satellite earth station facilities.

Given the numerous measures that are available to satellite earth station operators and BAS/CARS equipment licensees to enable spectrum sharing, Boeing supports the Commission's proposal to continue to permit satellite network operators to coordinate with mobile BAS and CARS operators using the coordination procedures that already exist in Sections 25.203, 25.251 and 101.102(d) of the Commission's rules.[12] In addition, Boeing supports the Commission's proposal to permit new mobile BAS and CARS licensees to initiate coordination in the 13 GHz band using either the *ad hoc* coordination procedures in Sections 74.638 and 78.36 of the Commission's rules or the procedures included in Section 101.103(d) of the rules.[13]

Finally, Boeing supports the Commission's proposal to permit satellite earth station operators to coordinate new facilities with fixed BAS/CARS stations in the 13 GHz band using the coordination procedures in Sections 25.203 and 25.251 of the Commission's rules, while adopting new coordination procedures for new fixed BAS and CARS stations with preexisting satellite earth station facilities. The Commission's approach will enable more efficient use of the 13 GHz band by permitting several different types of communications services to operate in the same spectrum on a cooperative basis.

IV. CONCLUSION

For the reasons set forth above, the Commission should adopt its proposed spectrum coordination rules for satellite earth stations and FS, BAS and CARS licensees in the 13 GHz

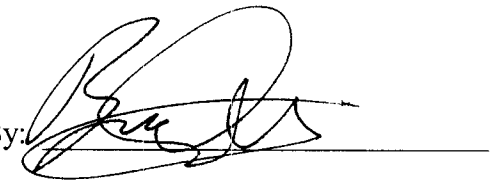
[12] *See id.*, ¶ 22.

[13] *See id.*

band to increase the efficient use of spectrum and promote the delivery of multiple services to consumers.

Respectfully submitted,

THE BOEING COMPANY

By: 

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